

General

Title

Children at risk: percentage of children in the eligible population who turned age 1, 2 or 3 years who had a screening for risk for developmental, behavioral and social delays using a standardized screening tool, concerning screening results and an early intervention (EI) referral and who had EI results documented in the medical record.

Source(s)

Oregon Pediatric Improvement Partnership. Standardized developmental screening, referral to early intervention (EI) for children identified at risk for developmental, behavioral and social delays and provider feedback from EI, in the first three years of life. Portland (OR): Oregon Health and Science University; 2013 Nov. 21 p.

Oregon Pediatric Improvement Partnership. Standardized developmental screening, referral to early intervention (EI) for children identified at risk for developmental, behavioral and social delays and provider feedback from EI, in the first three years of life: medical chart review specifications. Portland (OR): Oregon Health & Science University; 2012 Mar. 41 p.

Measure Domain

Primary Measure Domain

Clinical Quality Measures: Process

Secondary Measure Domain

Does not apply to this measure

Brief Abstract

Description

This measure is used to assess the percentage of children in the eligible population who turned age 1, 2 or 3 years who had a screening for risk for developmental, behavioral and social delays using a standardized screening tool, concerning screening results and an early intervention (EI) referral and who had EI results documented in the medical record by their first, second, or third birthday, respectively.

Rationale

The American Academy of Pediatrics (AAP) defines a developmental delay as a "condition in which a child is not developing and/or achieving skills according to the expected time frame." A child that is developmentally challenged may face many barriers throughout life; these barriers are even more severe if a delay in development is not detected early. Delayed or disordered development can lead to further health and behavior problems, including failure in school and social and emotional problems (Council on Children With Disabilities et al., 2006).

Early identification of developmental disabilities through surveillance and screening can lead to timely evaluation, diagnosis and appropriate treatment, including developmental intervention. Developmental surveillance should be a component of every preventive care visit. Standardized developmental screening tools should be used when such surveillance identifies concerns about a child's development. Furthermore, it is recommended that standardized screening for developmental, behavioral and social delays occur at the 9-, 18-, and 24-month OR 30-month well visits.

Pediatricians are not usually successful in identifying children with developmental delays without use of a standardized tool. (Hix-Small et al., 2007). These measures will encourage the use of standardized tools for developmental screening, as delineated by guidelines. Children who are identified earlier are more likely to have developmental promotion activities that can further improve the likelihood that they will be able to start school ready to learn.

This measure is focused on accessing the Bright Futures recommendations related to developmental screening using a standardized tool and the related follow-up and care coordination steps articulated in the AAP statement on developmental screening to which the Bright Futures recommendations are based. This measure builds off the work and recommendations of the Assuring Better Child Health and Development (ABCD) effort related to screening, follow-up and care coordination.

Evidence for Rationale

Council on Children With Disabilities, Section on Developmental Behavioral Pediatrics, Bright Futures Steering Committee, Medical Home Initiatives for Children With Special Needs Project Advisory Committee. Identifying infants and young children with developmental disorders in the medical home: an algorithm for developmental surveillance and screening. *Pediatrics*. 2006 Jul;118(1):405-20. [PubMed](#)

Glascoe FP, Shapiro HL. Introduction to developmental and behavioral screening. *Dev Behav Pediatr* Online. 2007;;various.

Hagan JF, Shaw JS, Duncan P, editor(s). Bright futures: guidelines for health supervision of infants, children and adolescents. 3rd ed. Arlington (VA): National Center for Education in Maternal and Child Health; 2008.

Hix-Small H, Marks K, Squires J, Nickel R. Impact of implementing developmental screening at 12 and 24 months in a pediatric practice. *Pediatrics*. 2007 Aug;120(2):381-9. [PubMed](#)

Kaye N, May J. Findings from the ABCD Screening Academy: state policy improvements that support effective identification of children at risk for developmental delay. Portland (ME): National Academy for State Health Policy; 2009 Mar. 9 p.

Kaye N, Rosenthal J. Improving the delivery of health care that supports young children's healthy mental development: update on Accomplishments and Lessons from a Five-State Consortium. Portland (ME): National Academy for State Health Policy; 2008 Feb. 65 p.

Oregon Pediatric Improvement Partnership. Standardized developmental screening, referral to early

intervention (EI) for children identified at risk for developmental, behavioral and social delays and provider feedback from EI, in the first three years of life. Portland (OR): Oregon Health and Science University; 2013 Nov. 21 p.

Plaza C, Rosenthal J, Hinkle L. The enduring influence of the Assuring Better Child Health and Development (ABCD) Initiative. Portland (ME): 2013 Jun 28. 28 p.

Primary Health Components

Developmental, behavioral and social delays; standardized screening tool; early intervention (EI) referral; EI results; at-risk children

Denominator Description

Children in the eligible population who turned age 1, 2, or 3 years and who had a screening for risk for developmental, behavioral and social delays using a standardized screening tool, concerning screening results and an early intervention (EI) referral documented in the medical record during the measurement year (see the related "Denominator Inclusions/Exclusions" field)

Numerator Description

Children in the corresponding denominator who had early intervention (EI) results documented in their medical record by their first, second, or third birthday, respectively (see the related "Numerator Inclusions/Exclusions" field)

Evidence Supporting the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

A clinical practice guideline or other peer-reviewed synthesis of the clinical research evidence

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Additional Information Supporting Need for the Measure

- Approximately 12% to 18% of United States (U.S.) children may have a developmental and behavioral problem. However, only about two percent of children from birth to two years old receive the necessary early intervention services (Hix-Small et al., 2007). A child who is identified as having a delay in development by the time he starts school and participates in early intervention programs is more likely to graduate high school, hold a job, live independently, and avoid teen pregnancy, delinquency and violent crimes—representing a saved cost to society of between \$30,000 and \$100,000 per child (Glascoe & Shapiro, 2007). Studies have shown that developmental surveillance based on non-standardized clinical judgment and observation alone does not accurately identify children with delays. Therefore, national recommendations call for routine, standardized screening of children three times in the first three years (at the 9-, 18- and 24- or 30-month well-visit).
- Findings from the National Survey of Children's Health show that only 19.5% of children are screened in the first five years of life. Despite the evidence, the use of standardized developmental screening tools is uncommon; only about 20% of physicians routinely use developmental screening tests (The Commonwealth Fund, 2008). One study found that pediatricians failed to identify and refer 60% to

80% of children with developmental delays in a timely manner. Another study found that 68% of children with delays were not detected by pediatricians. Though many significant delays occur before school age, less than 50% of children with delays are identified before starting school—leading to missed opportunities for treatment (Hix-Small et al., 2007).

- Studies suggest income disparities exist for developmental screening. One study found that only 23% of low-income children receive recommended preventive and developmental services (Bethell et al., 2002). The Early Intervention Periodic Screening, Diagnosis and Treatment (EPSDT) benefit for Medicaid children includes screening at each visit; however, as of 2007, 28 states were engaged in lawsuits due to a failure to properly deliver this service (Glascoe & Shapiro, 2007). Another study found that children most at risk for school difficulty were those whose mothers had less than a high school education, those who came from single-mother families, those who had received public assistance, and those who lived in families in which the primary language was not English (High, 2008). Specifically related to screening, the National Survey of Children's Health found that while improvements were needed in increasing screening for all children, significant variations existed in the rates of screening by race-ethnicity and insurance status.
- Studies also suggest that the use of a validated developmental screening questionnaire is more cost-effective method to identify developmental delay when compared to yearly professional assessments.
- Both research and demonstrated quality improvement activities such as the Assuring Better Child Health and Development (ABCD) Screening Academy have shown that providers can feasibly and sustainably implement standardized screening, and when done so, more children are referred to Early Intervention and other services and that the kinds and types of referrals performed are more appropriate than was previously done without standardized screening.
- A recent American Academy of Pediatrics (AAP) Periodic Survey of Fellows found that the percentage of pediatricians who reported using more than one standardized tool more than doubled between 2002 and 2009, demonstrating significant improvement after changes in AAP policy, enhanced guidance on reimbursement, and increased emphasis on developmental screening through research and educational programs as well as the new Bright Futures guidelines. However, approximately half of the pediatricians reported that they did not routinely use the recommended formal screening tools with patients younger than 36 months of age. Many pediatricians continue to rely on informal checklists completed by the pediatrician, office staff, and/or parents.
- When a child has a positive screening result for a developmental problem, developmental and medical evaluations to identify the specific developmental disorders and related medical problems are warranted. Children diagnosed with developmental disorders should be identified as children with special health care needs; chronic-condition management for these children should be initiated.
- It is important to note that this measure does not include standardized screening for a specific domain of development (e.g., social emotional screening via the ASQ-SE, autism screening) as it is anchored to recommendations focused on global developmental screening using tools that focus on identifying risk for developmental, behavioral and social delays. National recommendations also call for autism screening at the 18-month and 24-month well-visit and future, separate measures may be specified and build off the data collection efforts used for this measure to capture domain-specific screening. Additionally, many of the ABCD states included a distinct focus on complementary, but separate, screening specifically focused on social-emotional development (using tools such as the ASQ-SE). Similarly, future efforts may maximize the data collection efforts for this measure to include additional specifications focused specifically on social-emotional screening so that a separate measure may be calculated.

Evidence for Additional Information Supporting Need for the Measure

Bethell C, Peck C, Abrams M, Halfon N, Sareen H, Scott Collins K. Partnering with parents to promote the healthy development of young children enrolled in Medicaid: results from a survey assessing the quality of preventive and developmental services for young children enrolled in Medicaid in three states. Washington (DC): The Commonwealth Fund; 2002 Sep. 72 p.

Glascoe FP, Shapiro HL. Introduction to developmental and behavioral screening. Dev Behav Pediatr Online. 2007;;various.

High PC. School readiness. Pediatrics. 2008 Apr;121(4):e1008-15. [PubMed](#)

Hix-Small H, Marks K, Squires J, Nickel R. Impact of implementing developmental screening at 12 and 24 months in a pediatric practice. Pediatrics. 2007 Aug;120(2):381-9. [PubMed](#)

Oregon Pediatric Improvement Partnership. Standardized developmental screening, referral to early intervention (EI) for children identified at risk for developmental, behavioral and social delays and provider feedback from EI, in the first three years of life: medical chart review specifications. Portland (OR): Oregon Health & Science University; 2012 Mar. 41 p.

The Commonwealth Fund. Quality matters, May/June 2008. [internet]. Washington (DC): The Commonwealth Fund; 2008 May 6 [16 p].

Extent of Measure Testing

The measure was tested in eight managed care organizations who participated in the Assuring Better Child Health and Development (ABCD) III Performance Improvement Project in Oregon. Each managed care organization identified a sample that met the inclusion criterion. A total of 1,082 medical charts were reviewed and data analyzed.

Evidence for Extent of Measure Testing

Oregon Pediatric Improvement Partnership. Standardized developmental screening, referral to early intervention (EI) for children identified at risk for developmental, behavioral and social delays and provider feedback from EI, in the first three years of life: medical chart review specifications. Portland (OR): Oregon Health & Science University; 2012 Mar. 41 p.

State of Use of the Measure

State of Use

Current routine use

Current Use

not defined yet

Application of the Measure in its Current Use

Measurement Setting

Ambulatory/Office-based Care

Managed Care Plans

Professionals Involved in Delivery of Health Services

not defined yet

Least Aggregated Level of Services Delivery Addressed

Clinical Practice or Public Health Sites

Statement of Acceptable Minimum Sample Size

Specified

Target Population Age

Age less than or equal to 3 years

Target Population Gender

Either male or female

National Strategy for Quality Improvement in Health Care

National Quality Strategy Aim

Better Care

National Quality Strategy Priority

Health and Well-being of Communities

Prevention and Treatment of Leading Causes of Mortality

Institute of Medicine (IOM) National Health Care Quality Report Categories

IOM Care Need

Getting Better

Staying Healthy

IOM Domain

Effectiveness

Data Collection for the Measure

Case Finding Period

The measurement year

Denominator Sampling Frame

Enrollees or beneficiaries

Denominator (Index) Event or Characteristic

Clinical Condition

Diagnostic Evaluation

Patient/Individual (Consumer) Characteristic

Denominator Time Window

not defined yet

Denominator Inclusions/Exclusions

Inclusions

Denominator 1: Children in the eligible population who turned 1 year who had a screening for risk for developmental, behavioral and social delays (Fields 2.4 through 2.14*) using a standardized screening tool concerning screening results and an early intervention (EI) referral documented in the medical record during the measurement year

Denominator 2: Children in the eligible population who turned 2 years who had a screening for risk for developmental, behavioral and social delays (Fields 2.4 through 2.14) using a standardized screening tool, concerning screening results and an EI referral documented in the medical record during the measurement year

Denominator 3: Children in the eligible population who turned 3 years who had a screening for risk for developmental, behavioral and social delays (Fields 2.4 through 2.14) using a standardized screening tool that met, concerning screening results at their age-specific well child visit and an EI referral documented in the medical record during the measurement year

Denominator 4: The entire sample.

For children to be considered evaluated by early intervention (EI), they have had:

A screening test for risk for developmental, behavioral and social delays using a standardized screening tool (Field 2.1).

Concerning screening results documented in the medical record by their provider (Fields 2.4 through 2.14).

A referral to EI by their provider (Field 3.1).

*Field numbers correspond to OPIP Medical Abstraction Tool.

Note: Eligible population:

Continuous Enrollment:

For children 1 year: 31 days - 1 year of age. Calculate 31 days of age by adding 31 days to the child's date of birth.

For children 2 years: Children who are enrolled continuously for 12 months prior to the child's 2nd birthday.

For children 3 years: Children who are enrolled continuously for 12 months prior to the child's 3rd birthday.
Allowable Gap: No more than one gap in enrollment of up to 45 days during the measurement year. To determine continuous enrollment for a Medicaid beneficiary for whom enrollment is verified monthly, the beneficiary may not have more than a 1-month gap in coverage (i.e., a beneficiary whose coverage lapses for 2 months [60 days] is not considered continuously enrolled).
Anchor Date: Enrolled on the member's 1st, 2nd or 3rd birthday.
Event/Diagnosis: Age-specific well-child visit:
For children 1 year: The 9 month well-child visit. This visit includes any well-child visit between 8 and 10.99 months of age.
For children 2 years: The 18 month well-child visit. This visit includes any well-child visit between 17 and 21.99 months of age.
For children 3 years: The 24 month well-child visit. This visit includes any well-child visit between 22 months and 32.50 months of age.

Exclusions

Exclude eligible children from the denominator for whom the provider made a note about not administering the standardized screening tool due to existing, identified conditions, and/or for whom the screening tool would not, in their clinical judgment, be applicable or useful.
Medical factors addressed and noted in the chart by the provider about why they didn't administer the screening tool.

Exclusions/Exceptions

not defined yet

Numerator Inclusions/Exclusions

Inclusions

Numerator 1: Children in Denominator 1 who had early intervention (EI) results documented in their medical record (Fields 4.1 through 4.5*) by their 1st birthday
Numerator 2: Children in Denominator 2 who had EI results documented in their medical record (Fields 4.1 through 4.5) by their 2nd birthday
Numerator 3: Children in Denominator 3 who had EI results documented in their medical record (Fields 4.1 through 4.5) by their 3rd birthday
Numerator 4: Children in Denominator 4 who had EI results documented in their medical record (Fields 4.1 through 4.5) by their 1st, 2nd or 3rd birthday.

*Field numbers correspond to OPIP Medical Abstraction Tool.

Note:

The numerator identifies children who were referred to EI by their providers and who had EI results documented in their medical record.

Documentation of EI results in the medical record must include all of the following:

- The date on which the EI results were received/documented (Field 4.1).
- Results from EI about eligibility and/or evaluation results (Fields 4.4 and 4.5).

Current recommended tools that meet these criteria:

- Ages and Stages Questionnaire (ASQ) - 2 months – 5 years
- Ages and Stages Questionnaire - 3rd Edition (ASQ-3)
- Battelle Developmental Inventory Screening Tool (BDI-ST) - Birth – 95 months
- Bayley Infant Neuro-developmental Screen (BINS) - 3 months – 2 years
- Brigance Screens-II - Birth – 90 months
- Child Development Inventory (CDI) - 18 months – 6 years
- Infant Development Inventory - Birth – 18 months
- Parents' Evaluation of Developmental Status (PEDS) - Birth – 8 years
- Parents' Evaluation of Developmental Status - Developmental Milestones (PEDS-DM)

The following five step scoring process is recommended for this measure:

- Step 1: Determine the denominator (See specifications for each measure)
Identify the denominator for each age-specific indicator
- Step 2: Determine the numerator (See specifications for each measure)
- Step 3: Calculate the age-specific indicators (1-3) by dividing the numerator by the denominator and multiplying by 100 to get a percentage.
- Step 4: Create the measure based on the age-specific measures.
Numerator: Numerator for Indicator 1 + Numerator for Indicator 2+ Numerator for Indicator3 (Divided by)
Denominator: Denominator for Indicator 1 + Denominator for Indicator 2+ Denominator for Indicator 3
- Step 5: Multiply by 100 to get the proportion percentage

Exclusions

None

Numerator Search Strategy

Fixed time period or point in time

Data Source

Administrative clinical data

Paper medical record

Type of Health State

Does not apply to this measure

Instruments Used and/or Associated with the Measure

Oregon Pediatric Improvement Partnership (OPIP) Medical Abstraction Tool

Computation of the Measure

Measure Specifies Disaggregation

Does not apply to this measure

Scoring

Rate/Proportion

Interpretation of Score

Desired value is a higher score

Allowance for Patient or Population Factors

not defined yet

Description of Allowance for Patient or Population Factors

Report three age stratifications and a total rate for all eligible children:

- 1 year
- 2 years
- 3 years
- Total

The total is the sum of the age stratifications.

Standard of Comparison

not defined yet

Identifying Information

Original Title

Measure #4: proportion of at-risk children who were referred to early intervention (EI) for whom information about early intervention is in the primary care provider's medical chart.

Measure Collection Name

Developmental Screening in the First Three Years of Life

Submitter

Colleen Reuland on behalf of the Oregon Pediatric Improvement Partnership at Oregon Health and Science University - Independent Author(s)

Developer

Oregon Pediatric Improvement Partnership - Academic Institution

Funding Source(s)

This medical chart specifications were developed under the rubric of a contract from the Oregon Division of Medical Assistance (now termed Oregon Health Authority) as part of the Assuring Better Child Health and Development (ABCD) efforts.

Composition of the Group that Developed the Measure

Ms. Reuland led the measure development in collaboration with the Charles Gallia, PhD. The measure specifications were reviewed by the advisory committee of the Oregon Assuring Better Child Health and Development (ABCD) effort that included managed care plans, other state agency representatives, pediatric primary care providers, specialists in pediatric development, private health care providers and public health, particularly maternal/child health and early child education and mental health professionals.

Financial Disclosures/Other Potential Conflicts of Interest

The author does not have a conflict of interest or financial interest to disclose.

Adaptation

This measure was not adapted from another source.

Date of Most Current Version in NQMC

2012 Mar

Measure Maintenance

Annually

Date of Next Anticipated Revision

2015 Jan

Measure Status

This is the current release of the measure.

The measure developer reaffirmed the currency of this measure in April 2016.

Measure Availability

Source available from the [Oregon Pediatric Improvement Partnership \(OPIP\) Web site](#)

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NQMC Status

This NQMC summary was completed by ECRI Institute on May 13, 2014. The information was verified by the measure developer on June 18, 2014.

The information was reaffirmed by the measure developer on April 7, 2016.

Copyright Statement

This NQMC summary is based on the original measure, which is subject to the measure developer's copyright restrictions.

For more information, contact Colleen Peck Reuland, MS, Executive Director of the Oregon Pediatric Improvement Partnership (OPIP) at 707 SW Gaines Road, Portland, OR 97239-3098; Phone: 503-494-0456; Fax: 503-494-1542; Web site: www.oregon-pip.org ; Email: reuland@ohsu.edu.

Production

Source(s)

Oregon Pediatric Improvement Partnership. Standardized developmental screening, referral to early intervention (EI) for children identified at risk for developmental, behavioral and social delays and provider feedback from EI, in the first three years of life. Portland (OR): Oregon Health and Science University; 2013 Nov. 21 p.

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